Supplying Peace: Participation in and Troop Contribution to Peacekeeping Missions

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Abstract

This article explores the supply-side of peacekeeping, the domestic and international determinants of a country's voluntary contributions to peacekeeping operations. We extend previous analyses through a focus on troop contribution and the examination of a large set of operations, from the UN-led missions to operations led by the NATO; the African Union; the European Union; the Commonwealth of Independent States; and *Ad-hoc* Coalitions (e.g. East Timor, Côte d'Ivoire, Haiti). We rely on a theoretical model on the private provision of public goods and a panel data analysis to explain both the conditions under which third-party actors are more or less likely to intervene in peacekeeping operations; and the factors determining the size of their personnel contribution. We use the characteristics of the conflict to identify which types of conflicts attract outside intervention; and the characteristics of the intervener to identify the countries more willing to provide troops. The article exploits a dataset on troop contribution across 102 states and 45 operations from 1999 to 2009. We show that at the domestic level contributions are driven by the comparative advantage in manpower - or the relative value of labor - and constrained by the tolerance of casualties and the sustainability of multiple and concurrent missions. At the international level, the most robust explanations of when states choose to intervene are the level of threat to global and regional stability, the proximity to the conflict area and the number of displaced people. In particular, security and humanitarian concerns are shown to trigger nation-specific responses. Using a variety of proxies, our empirical findings provide further evidence of the centrality of country-specific gains in explaining the participation to peacekeeping. However, we suggest that contributor-specific benefits play the same role in UN and non-UN peacekeeping missions, in contrast with previous empirical studies on the financial burden sharing.

Introduction

The post-cold war period has been characterized by peacekeeping operation and peace negotiations, with increased size, number and intensity of external interventions, particularly those sponsored by multilateral organizations. In this article we explore the supply-side of peacekeeping, the domestic and international determinants of a country's contributions to peacekeeping operations from 1999 to 2009. There are three dimensions to peacekeeping: demand, the situation that allows for foreign military intervention; supply, the factors determining third parties' voluntary contribution to peace operations, and thus the willingness of states to provide that intervention and the constrained faced in meeting the demand; and the outcome of the operation, which is determined by the nature of the interaction.[1] The high demand for multilateral military forces in Africa and the Middle East ensures that the supply of uniformed personnel is a recurrent and intensifying challenge for the international community. Yet, there is only a modest understanding of why nations with heterogeneous geographic positions, economies and institutions agree to dispatch their troops to remote conflict areas.

Peacekeeping is the most common type of action by armed forces today, it is a purposeful dispatch of national troops into another sovereign country, and can be identified as a subset of military intervention (i.e. the movement of regular troops or forces of one country inside another, in the context of some political issue or dispute (Pickering & Kisangani, 2009)). The definition of peacekeeping as stated by the Nobel Prize Committee when the prize was awarded to the UN in 1988: as the contribution to "reducing tensions where an armistice has been negotiated but a peace treaty has yet to be established". Therefore, it can be conceptualized as a military intervention designed to maintain or restore peace. On one hand, as Victor (2010) points out, peacekeeping is usually implemented when a cease-fire has been established, and they rarely bring heavy armaments. On the other hand, recent cases have seen these forces impose their will or engage in active defense to accomplish their mandate (e.g. Bosnia and Somalia). Moreover, in examining the quantitative evidence on peacekeeping we encountered substantial methodological difficulties in determining which foreign deployments of troops -in the internal conflict of another state - should be counted as peacekeeping. The operational criteria we use (i.e. by SIPRI) states that the deployment is authorized by the UN with the stated intention to: (a) serve as an instrument to facilitate the implementation of peace agreements already in place, (b) support a peace process, or (c) assist conflict prevention and/or peace-building efforts (see Bellamy *et al.*, 2010. Therefore, there are specifi features ascribable to peacekeeping (e.g. the stated intention to contribute to the implementation of a peace process between the fighting parties), which make it distinct from other forms of third party intervention in conflict. Thus, our article depart from the group of studies analyzing the reasons behind military interventions by external powers - broadly defined and excluding multilateral interventions (e.g. Mitchell, 1970; Pearson, 1974; Carment & James, 1995; Regan, 1998). The interventions we consider take on a multilateral

character under the auspices of the United Nations. Since peacekeeping generates public benefits, we develop a theoretical model based on the private provision of public good. Empirically, we only single out interventions which conform with our operational criteria, although we recognize that in some cases the stated goal may be just rhetoric and may not reflect the real motivations of the intervener.

Another group of quantitative studies on this topic analyses the financial burden sharing of peacekeeping, to grasp the ratio of excludable to public benefits generated by peace operations (e.g. Olson Jr & Zeckhauser, 1966; Khanna *et al.*, 1999; Shimizu & Sandler, 2002; Gaibulloev *et al.*, 2009). Nevertheless, financial contributions do not mirror personnel contributions. The top 10 countries that accounted for roughly 80% of the financial contributions to UN missions in the period considered contributed less than 10% of the personnel employed in UN peace operations in the same period.[2] Furthermore, personnel contributions serve as better indicators of state objectives for a number of reasons.

Firstly, conflict characteristics influence the decision to intervene, and the size of the intervention. The risk of casualties, for example, is an important determinant and countries are reluctant to provide troops that might be placed at risk. Secondly, a country's offers to provide personnel are subject to their overall national military capacity (e.g. force size, concurrent commitments, and logistical capabilities). Taken together, the capability to provide troops - sometimes configured to engage in combat operations - and the willingness to pay the human costs involves very different decision criteria. Thirdly, the quality of the troops selected has an impact on the outcome of the operation (e.g. British paratroops vs. Ghanian soldiers). Moreover, indiscipline among peacekeeping troops has also been a cause of concern.[3] A failure to accomplish the objectives of the operations may create embarrassment while the perpetration of crimes against the local population may lead to serious investigations by the UN. Finally, contributors can choose whether to deploy troops in some particular conflict area; and they have more control over the use of their national contingents than their financial contributions (Lebovic, 2004). Therefore, the procedure for staffing an operation follows more complex decision making processes. We believe that personnel contributions are better indicators of a country's motivations and constraints.

The quantitative studies most closely related to ours are Lebovic (2004) and Victor (2010). Lebovic (2004) focuses mainly on the link between democracy and UN peace operations in the period between 1993 and 2001. He finds that the UN peace operations of the post-Cold War era relied on democratic contributions. Victor (2010) examines African states' contributions to peacekeeping between 1989 and 2001. He suggests that poorer states, with lower state legitimacy and lower political repression, are more likely to participate in regional peacekeeping. The first difference between their approaches and ours is the inclusion of all UN and non-UN operations and a larger number of world's countries (i.e. 102) from 1999 to 2009. Many countries operate through their regional organizations, which vary from multi-regional organizations such as the NATO and the African Union (AU) to sub-regional organizations such as the Economic Community of Central African

States ECCAS (CEAAC) and the Commonwealth of Independent States (CIS). We do not limit our study to UN operations or sub-Saharan African states and we compare UN peacekeeping against other regional organizations.

The second main difference with our work is our attempt to control for international-level and domestic-level factors. Our paper is broader in scope and addresses a different set of hypotheses, although it retains some of the variables used by the above-mentioned studies, notably the military capacities and the relative wealth of donor countries. We develop novel hypotheses, which explain contributions through 1) the "mercenarization"' of peacekeeping forces; 2) the ambition of the intervening nations; 3) their tolerance of casualties and 4) the constrains given by the number of concurrent operations; 5) the effect of humanitarian crises; and 6) the proximity to the country in conflict. We apply our hypotheses to all the categories of operations to provide a basis for comparison. Therefore, we refrain from using some interesting control variables, such as regime type, where little or no variations would be found across a homogeneous group of countries (e.g. NATO, EU and CIS).

We divide the intervention dilemma in two problems: (i) a country decision to participate (participation); and (ii) what determines the number of personnel a country supplies (troop contribution). Drawing on a theoretical model on public goods and on a number of qualitative arguments and quantitative studies, we formulate eight hypotheses. This is followed by a discussion of the dataset and a presentation of the panel methods used in the empirical analysis. Next, we present a panel analysis of individual countries personnel contributions to peace operation in the period 1999-2009. Finally, we discuss the inferences we might draw from the empirical investigation. A discussion of the dataset a table of descriptive statistics are included in the web-appendix, together with the replication data.

Theoretical model

We develop a theoretical model to identify how contrasting domestic and international forces shape a country's decision to participate in a peace mission and how they determine the size of its contribution, should it decide to intervene. Considering the state as a rational actor maximizing utility subject to a resource constraint, it must decide (a) whether to intervene or not and (b) the number of troops to provide in case of participation. For the first problem, we adapt Regan (1998) to describe peacekeeping missions, rather than military interventions broadly conceptualized. Next, we expand and modify his framework to allow for the size of a country's participation, and to derive the condition for efficiency in terms of its troops commitment.

Participation

For the first problem, we need to specify the expected utility for intervening EU_i^I and the expected utility for not intervening EU_i^N. We assume that both functions

are strictly concave and increasing in their arguments. EU_i^N can be expressed as:

$$EU_i^N = p[U_i^p] + (1-p)[U_i^c] \tag{1}$$

where p represents the probability that the conflict will be settled without nation's i intervention, U_i^p is the nation's i utility attached to peace without her intervention and U_i^c is the utility of continued conflict. For simplicity, we assume that there are no costs associated with not intervening.

Although international peace is traditionally regarded as a public good (Kindleberger, 1986), peacekeeping can not be considered as a pure public good. It is an hybrid good that posses some features of both public and private goods. Peace operations produce pure public benefits and some excludable and rival contributor-specific benefits. It is "impurely public" because its benefits are not fully available to some countries and benefits decline with the number of countries deriving gains from such missions (Cornes & Sandler, 1996). Thus, peacekeeping yields *joint products*. Part are purely public to the international community; part are impurely public to a sub-group of countries; and part are country-specific to the participants (Shimizu & Sandler, 2002).

For the reasons above, a nation's expected utility for intervening EU_i^I is given by:

$$EU_i^I = q[U_i^s] + (1-q)[U_i^f] - \sum C_i^I \tag{2}$$

where q is the probability of a successful intervention with nation's i contribution, U_i^s is the utility associated with a successful outcome and U_i^f reflects the utility to the potential intervener from an unsuccessful intervention. $\sum C_i^I$ are the costs associated with intervention.

The net benefit of intervention is given by

$$EU_i^I - EU_i^N = q[U_i^s] + (1-q)[U_i^f] - \sum C_i^I - p[U_i^p] - (1-p)[U_i^c] \tag{3}$$

When $EU_I - EU_N > 0$ there will be intervention. Therefore, the decision is strongly influenced by the expected marginal impact of country i on the global intervention outcome, by the conflict characteristics, captured by p, and by countries' individual preferences over outcomes. Here, we would need to assume *a priori* a sort of utility ordering, which is country-specific. For some countries the utility of continued fighting is higher than the utility from a failed peacekeeping intervention, because they value more their global image. Some countries derive utility from characteristics of peacekeeping rather than peacekeeping itself. Indeed, the model highlights two different decision-making processes when it involves different groups of countries, those sitting in the UN Security Council, for example, and third world states. The former group authorizes the operations, pay the financial costs, and most likely derives utility from the outcome of the intervention. For those countries $U_i^s >> U_i^f$ and $U_i^p >> U_i^c$, i.e. the utility from peace strictly

dominates the one from continued conflict, regardless of their participation. For the latter group, donating troops and receiving some benefits in return is more valuable than a self-settlement without their involvement because the country-specific benefits of intervention (e.g. the UN compensation) are higher than the global public characteristics (e.g. countering global instability). Participating is a success *per se*, i.e. $U_i^s \approx U_i^f >> U_i^p \approx U_i^c$.

Troop contribution

We expand the model above, and consider two military goods, one s_i is private, say the number of troops employed within the national boundaries. The other T is a public good, which is the size of the country i's own peacekeeping contributions t_i and those of the other n-i nations T_{n-i}. The countries initially have some positive endowment of the private good, N_i and determine how much to contribute to the public good. Each nation faces a "troops constraint" when choosing among peacekeeping t_i and other military activities s_i. If country i decides to contribute t_i , he will have $s_i = N_i - t_i$ of "private security consumption" (e.g. home defense). In case of multiple peacekeeping operations, s_i captures also the troops already committed to other operations. Each unit of peacekeeping generates two joint products, a private benefit αt_i and a global purely public characteristic βt_i. α and β are positive parameters and account for the coexistence of altruistic motivations (β) with the egoistic considerations (α) of intervening states.

To simplify, let us assume that in Equation (3) the utilities to country's i from continued war, regardless of its intervention, are both small enough to be considered negligible, therefore $U_i^f \approx 0$ and $U_i^c \approx 0$. In the same equation, p and q account for the outcome of the intervention, which is decided by country's i participation and the coalition's relative investment in fighting. We consider a unique probability σ as a success ratio, given by

$$\sigma(t_i) = \frac{T_{n-i} + t_i}{M + T_{n-i} + t_i} \tag{4}$$

where the intervener fighting effort is measured by the scale of his deployment and M is the belligerents' strength and therefore their resistance against a third party involvement. When $t_i = T_{n-i} = 0$ there are no chances that the conflict will be settled without any third party involvement. Let us define a utility function, that captures the optimal number of troops to dispatch in peace operations. The utility is defined over the space of private and public characteristics, is strictly increasing in consumption of both the private and the public good, quasiconcave, continuous and everywhere twice differentiable. Since peacekeeping generates excludable and rival contributor-specific benefits, with an adaptation of Khanna *et al.* (1999) model and following Equation (3), country i's expected utility function can be written as follow:

$$EU_i = \sigma(t_i) U_i[\alpha t_i, \beta(t_i + T_{n-1}), s_i, Q] - C_i(t_i) \tag{5}$$

Q is added to the function to capture any factor that can influence the utility from peacekeeping, such as the international security threat posed by the conflict and the proximity to the conflict area. $C_i(t_i)$ are the costs of participation. The cost function is continuous, increasing in its argument t_i, differentiable and convex because each additional unit of "boots on the ground" requires increasingly higher costs. Accounting for the cost of a peace mission is complicated.[4] Besides the military costs, the most important is the loss of life in peacekeepers ranks. The value of life is usually compared to the discounted value of earnings foregone by individuals. We assume that the cost function can be expressed as

$$C_i(t_i) = VSL[WTP/R]\, t_i \tag{6}$$

where VSL is the unit cost of a soldier, that is the value of life. Public choices about safety in a society require estimates of the willingness of people to trade off wealth for a reduction in the probability of death. The literature on the topic assumes that VSL is increasing in the individual's willingness to pay (WTP) to reduce the risk of death - or on his willingness to accept a certain amount to see his life expectancy reduced - and decreasing in the probability of death R (Bellavance *et al.*, 2009). In our context R is the risk of a mission.

Defining x as the nation-specific output αt_i and y as the global public characteristics $\beta(t_i)$, the first order condition for t_i can be found by maximizing (5) and can be written as

$$\sigma'(t_i)U_i + \sigma(t_i)\left[\alpha\frac{\partial U_i}{\partial x} + \beta\frac{\partial U_i}{\partial y}\right] = \sigma(t_i)\frac{\partial U_i}{\partial s_i} + VSL[WTP/R] \tag{7}$$

The condition for efficiency is that the marginal benefit of providing peacekeeping (left-hand side of Equation 7) equals the marginal costs (right-hand side). The marginal benefit is the sum of the utility weighted by the marginal impact of a soldier on the probability that intervention will be successful and the marginal utility of the private and purely public activity weighted by the probability of success. The marginal benefit is offset by the sum of the opportunity cost of having less soldiers for national duties times the probability of success and the expected marginal cost of casualties.

To summarize, we draw a number of intuitions from the model. A raise in country i contribution increases the success ratio, and therefore the probability of a successful intervention (Equation 4). While a traditional peacekeeping force into the midst of active and heavy hostilities M may even be limited in its ability to defend itself, high values of t_i result in higher odds of establishing peace. But a raise in t_i also directly increases the amount of private benefits deriving from the participation, such as the UN reimbursement (αt_i in Equation 5), and the quantity of public goods generated by the operation, such as the level of global stability (βt_i in Equation 5). However, the higher the unit cost of a soldier and the expected marginal costs of casualties (Equation 6), the lower will be the marginal utility for participating (Equation 7). Moreover, since countries face a troops constraint

when choosing between a peacekeeping mission t_i and other activities s_i, including alternative peace operations, they may not be willing to bear the additional burden of a new deployment, when they have already committed forces elsewhere ($\frac{\partial U_i}{\partial s_i}$ is negative). Overall, it is not obvious what is the net effect of an increase in t_i on the marginal utility (Equation 7). This is something that has to be determined from the data. Finally, there are a number of exogenous factors, like the level of threat posed by the conflict, captured by the parameter Q in equation 5, which shape nation-specific responses.

Why states choose to intervene: testable hypothesis

We rely on the intuitions of the theoretical model and on a number of qualitative and quantitative studies to categorize peacekeeping motivations. We distinguish between participation and contribution, along decisions related to the nature of the operation; the nature of the conflict and the region at stake; and the characteristic of the intervener. We identify seven explanations of peacekeeping.

Hypothesis 1. *Conflict spillover: a geographic proximity to the country in conflict increases the likelihood of participation.*

A geographic proximity to the country in conflict increases the utility a neighboring country expects to get from the cessation of the hostilities. Sharing a border with a country at war means an increase in the probability of instability in the surrounding area (spill over effects). As a consequence the national security is endangered by the risk of geographic contagion (Gleditsch, 2007). Benefits from peace are unevenly distributed. The positive externalities generated by an operation are first and foremost consumed by the conflict-ridden country and by the neighboring countries, that are particularly at risk and are keen to consolidate the neighbourhood stability. A conflict may upset a regional balance or provide opportunities for a rival power to increase its influence by intervening on one side of the conflict. Bringing to a halt the conflict is important to the intervener because of the conflict's effects on its relation with the disputing parties in the region. The intervener can also increase its presence and influence by becoming guarantor of an agreement, or by establishing a precedent that would justify future involvement in the affairs of the region (Zartman & Touval, 2007). To test this hypothesis, we use a dummy taking value 1 if the donor country is in the same region as the recipient country. We integrate this measure with the distance between the donor and host states to offer an alternative and more precise indication of the proximity.

Hypothesis 2. *The mercenarization of UN forces: developing countries exploit their comparative advantage in manpower.*

Equation 3 highlights the advantages that some countries derive from particular characteristics of peacekeeping, i.e. a number of benefits accruing to the donors. And money is perhaps the motivation more often brought forward for developing

countries' contributing to peacekeeping. There is some doubt about UN inclination to subsidize the troops of developing countries during peace missions (i.e. the UN pays them for borrowing their troops). The "mercenarization" of UN forces has been often denounced by several practitioners and scholars. Kinloch-Pichat (2004) claims that the defects ascribed to *ad-hoc* national contingents are those "historically attributed to mercenary forces: foreign allegiance, corruption and unwillingness to take the necessary risks when it comes to fighting". Peacekeeping contracts are lucrative and are often used as leverage, in order to influence the providers of troops. The cost of UN peacekeeping missions include the compensation for troop contribution at a rate of US$ 1,028 per month per troop, the repayment for use of the provider's own equipment and clothing (US$68), the repayment for personal weaponry (US$5), a supplementary pay for specialists (US$303), and disability costs.[5] Although the reimbursement should be contextualized by considering the exchange rate, for those countries that deploy large peacekeeping forces, the earning is a significant proportion of the defence budget, even in countries with a large standing army. A system of fixed reimbursement redistributes resources to developing countries, without requiring that the surpluses be reinvested in equipment or training useful to the UN (Durch, 1993). Well-equipped and well-trained troops from Western countries may be less inclined to participate in UN operations in the developing world. Also, the value of life increases as the nation develops (Seiglie, 2005), therefore UN cash remuneration might not suffice to offset the risks and costs of contribution. Moreover, many intervener countries are capital-poor and labor-rich, and this capital-poverty means having large, non-technologically sophisticated armies.

As our model states, donor countries face a troop constraints. Consequently, the number in the armed forces of a country and their remuneration determines the likelihood and the size of intervention. The size of the armed forces and the real GDP per capita are used as proxies for this comparative advantage in manpower. We also use additional covariates related to the labor market scenario, such as the unemployment rate and the tertiary enrollment rate, to capture the relative value of labor.

Hypothesis 3. *Tolerance of casualties: the valuation of life in wealthier nations envisages a casualty-adverse approach that leads to engagements with lower casualty risk.*

Equations (6) and (7) underline the importance of the unit cost of a soldier and the expected marginal costs of casualties in the participation dilemma. In some countries public openness to peace operations does not automatically extend to actions involving combat and politicians have to carefully justify the operation's nature. The tolerance for causalities is often an obstacle, and it is deemed to be one of the causes behind the unexpected US withdraw from Somalia in 1994. The political system of wealthier countries has a greater sensitivity to the higher value of life associated with economic growth. Public support for risky foreign policies is fragile and precipitately erodes with failure (Mueller, 1971). Therefore, intervening

countries have to demonstrate to their domestic populations that their military efforts are worthwhile and at a tolerable cost (Freedman, 2007). The value placed on soldiers life (VSL) is not directly observable, so an indirect method is required for measurement. VSLs may vary between countries due to differences in cultural norms or in income levels (Miller, 2000). The sensitivity of VSL to income within various countries, has been documented in several studies, all suggesting that VLS varies elastically with income, with an income elasticity between 0.4 and 0.7 (see for example Viscusi & Evans, 1990; Persson *et al.*, 1995; Viscusi & Aldy, 2003; Kniesner, 2010). In particular, a recent study by Kniesner *et al.* (2010) finds an income elasticity of VSL above the unity. Thus, we use the GDP per capita to proxy for the value of life. The level of risk R is another important factor affecting the decision. R increases the marginal costs of an intervention (Equations 6-7) We consider the number of deaths among the peacekeepers as a signal of the level of risk of any operation. High fatality rates among the peacekeepers inform the intervener about the cost-tolerance of combatants.

Hypothesis 4. *Level of threat: given an ongoing conflict, the greater the security threats posed are, the higher the likelihood and size of participation will be.*

Hypothesis 1 captures the threat of the conflict to a potential donor. However a measure of proximity is not time-varying and does not take into account the level of threat posed by an ongoing conflict. Moreover, peacekeepers do not just deploy within their region of origin or its immediate neighborhood.[6] When a conflict is regarded as a threat to the regional, and sometimes global stability, security concerns will trigger nation-specific responses (see the parameter Q in Equation 5). A public that feels insecure and has a perception of international security threats is likely to support demanding international operations, like the NATO intervention in the Balkans. The need to keep energy supplies flowing and international waterways accessible during regional crises may also justify intervention, such as the EU maritime operation off the cost of Somalia.

In presence of a clear threat, there is no lack of political will and the deployment is rapid and powerful (Lahneman, 2004). This hypothesis presents a realistic framework on the international dimension of civil wars. We use the conflict intensity as a proxy for the level of threat that a conflict poses.[7]

Hypothesis 5. *Humanitarian intervention: the participation increases in presence of a large population displacement or an imminent humanitarian crisis.*

Existing humanitarian norms at the international system level influence the extent of humanitarian military intervention by states (Finnemore, 2008). But there are also benefits to intervening in civil wars with humanitarian implications, and domestic costs to not intervening. Such an approach is particularly manifested when public opinion and media pressure urge national governments to intervene. Public demands for action are reactive; they arise after widespread media coverage of human rights violations has raised public awareness. The physiological effect of

the media coverage of civil wars encourages leaders' response. Shaw (1996) argues that the "'CNN effect"' has completely transformed foreign policy-making and has changed the media-government interaction in the context of humanitarian intervention. Dowty & Loescher (1996) suggest that refugee flows can impose costs that affect the national interests and that interventions in conflicts with large refugee flows are justified by international conventions. . We use the number of internally displaced persons to test whether humanitarian motivations are associated with the decision to intervene and the size of participation.

Hypothesis 6. *Troops constraint: the greater the number of multiple missions, the lower the likelihood and size of participation in new operations*

Our theoretical model says that countries face a "troops constraint" when choosing among peacekeeping missions t_i and other military activities s_i. Given a number of concurrent operations being sustained at any one time by country i, we should expect a decreasing ability to join additional operations when this number increases. Therefore, the participation in a given UN operation negatively affects the participation in another set of, say, non-UN operations. Obviously, a soldier under NATO command cannot simultaneously be in a UN mission. An assumption of competitive relationship is at play here. NATO members also have to meet their alliance commitments in terms of manpower and materials required to achieve set objectives and might not be able to generate additional forces. We use the number of operations conducted at the same time as an indicator of the sustainability of multiple operations.

Hypothesis 7. *Ambition: 1) UN Security Council candidates are more likely to provide troops in UN operations; 2) military expenditure determines the likelihood and size of participation.*

The relation between the intervener's standing in the international distribution of power and the host country can also explain the reasons of intervention (Bellamy *et al.*, 2010). Military contribution is linked with the level of political and military ambition, that is a consequence of the international standing of a state. Ambition is a measure of the desire to establish and assert a role in international security matters (Zartman & Touval, 2007).

The combined forces of the permanent five member of the Security Council constitute a fair portion of peacekeeping troops. P5 participation in various peace operations may serve to legitimize their permanent seat in the Security Council.

There are also a number of potential members of the Security Council who consider participation as a way to enhance their standing in the international community and as a prerequisite for middle power status in the UN and for a permanent seat in the Security Council (Daniel *e al.t*, 2008). As a measure of status in the international community, we use a dummy for countries elected as non-permanent members of the Security Council in the subsequent year. Moreover, as a measure of the military ambition of a state and the relative weight of the

military apparatus we use the military expenditure as a percentage of GDP and the rate of militarization.

Econometric models

The aim of the empirical investigation is to analyse the factors determining a country's decision to participate (participation); and those explaining the number of soldiers deployed by a country in a specific mission (contribution). We use static discrete choice models to analyse the probability of participating; and fixed effects and first difference panel regression models when we look at the contribution. For each problem, we now discuss the choice of the sample, the covariates and the functional form.

Modelling participation

Consider a set of countries i=1,2,...,N who might participate in a peace operation, then defining y_i=1 for participation, we want to model $Pr[y_{it} = 1|x_{it}]$, with covariates x_{it}. The choice poses some issues. If we considered each operation UN Charter, Chapter VI and VII, as "192 UN members intervention potential", the approach would be methodologically wrong. Many countries have a long-lasting tradition of non-intervention in peacekeeping, such as Iran, Israel and North Korea. Few are considered lawless or failed states, such as the Somali Republic or Iraq, therefore incapable of projecting national troops abroad. Others have no military resources; approximately 24 countries (the figures vary from different sources) have either no military forces or no standing army. Therefore, we consider as potential intervener any state that participated in at least one peace operation with at least one soldier in the period considered. We only consider troops, therefore excluding military observers, civilian police and civilian staff. In the participation model, the dependent variable is a dichotomous one that takes on the value of 1 in the case of participation and zero in the case of non-contribution. The observational unit is country-operation-year.

Unfortunately, we are only able to estimate such model for UN missions, since we can not construct a control group (non-participating countries) for other type of operations. This is obvious for the ad-hoc coalitions, in which the control group does not exist *a priori*; while in NATO, EU and AU missions too many members participate in any mission-although sometimes with few soldiers- leaving us with a very small control group which makes any inference unreasonable. Participating in operations sponsored by regional organizations is principally driven by a sense of identity towards these organizations, and therefore less influenced by the the factors explained by our hypotheses. A country decision to participate is modelled according to the following reduced form model for participation:

$$\Pr[y_{it} = 1|x_{it}, \alpha_i] = \Phi(x'_{it}\beta + \alpha_i) \quad i = 1, ..., N; t = 1, ...T \tag{8}$$

where x is a vector of strictly exogenous observed explanatory variables and β is the associated coefficient vector. The covariates vector x includes information on the conflict, the peace operation and the participating country. The model also has a random intercept α_i to account for individual-specific unobserved characteristics. Φ is the cumulative distribution function of a standard normal variate.

The standard uncorrelated random effects model assumes α_i uncorrelated with x_{it}. Alternatively, following Mundlak (1978) and Chamberlain *et al.*, (1984), correlation between α_i and the observed characteristics can be allowed by assuming a relationship of the form $\alpha_i = \overline{x}_i' a + \varepsilon_i$ and with ε_i independent of x_i'. Thus the model may be written as:

$$\Pr[y_{it} = 1 | x_{it}, \alpha_i] = \Phi(x_{it}'\beta + \overline{x}_i' a + \varepsilon_i) \quad i = 1, ..., N; t = 1, ...T \tag{9}$$

To check for robustness of the random effect probit, we run a random effect complementary log log specification, which take into account any asymmetry in the distribution of the dependent variable. Finally, to relax the distributional assumption about the unobserved heterogeneity parameter, we estimate a linear probability model with fixed effects.

Modelling troop contribution

In the second empirical part, we try to identify the determinants of the number of soldiers a participant country deploys in a particular mission. Therefore the sample is made up of those that contribute.

The model is specified as:

$$y_{it} = x_{it}'\beta + f_i + \epsilon_{it} \quad i = 1, ..., N; \ t = 1, ...T \tag{10}$$

where f_i is the time invariant country-specific effects and ϵ_{it} is the error term.

In order to eliminate the fixed effect f_i we apply two customary transformations of the original model: first differences and the within transformation. The first-differences estimator is obtained by subtraction of the lagged one period model from the original model (Equation 10). The following model is then estimated

$$\Delta y_{it} = \Delta x_{it}'\beta + \Delta\epsilon_{it} \quad i = 1, ..., N; \ t = 2, ...T \tag{11}$$

The within model is obtained by subtraction of the time-averaged model from the original model (10). Then:

$$y_{it} - \overline{y}_i = (x_{it} - \overline{x}_i)'\beta + (\epsilon_{it} - \overline{\epsilon}_i) \quad i = 1, ..., N; t = 1, ...T \tag{12}$$

In both procedures the country-specific effects f_i is removed.

Modelling contribution poses a sample selection problem. Since the decision to intervene precedes the one about the number of troops to dispatch, the sample is apparently non-randomly selected. Model estimates based on such non-randomly selected sample might be biased leading to erroneous conclusions (Heckman, 1981).

Furthermore, the distribution of troops' contribution takes on non-negative values. A censored regression model might solve the problem and take care of the censoring by postulating a latent distribution of troops' contribution for non-participant. However, this last hypothesis is somehow puzzling for three reasons: firstly, as mentioned above, there are countries incapable of projecting troops abroad and/or having no military resources. Troops' contribution for these countries is necessarily zero. Secondly, the assumption of latent negative values of the distribution of troops' contribution cannot be supported. Thirdly, the censored regression model relies on the normality assumption of the latent variable, which is a strong parametric assumption. Tobit-type latent variable models make sense if the data we are working with are truly censored.[8] In addition, the panel structure of our data would be mathematically complex to combine with a censored regression model; a large burden of computer programming and a set of strong distributional assumptions would be necessary for such a combination (see Hisiao, 2001). Some scholars propose the use of non-parametric estimators for correcting selection bias (amongst others Kyriazidou (1997)), but no method has been widely accepted so far. As a consequence, we decide to rely on the customary linear panel model.

One might argue that the underlying process both for participation and troops contributions is dynamic, that is, it is likely that the decision in the previous period can explain part of the variance of the dependent variable. If this is true, the residuals of the linear panel regression are serially correlated and we need to specify a dynamic model. The GMM estimators of Arellano & Bond (1991), Arellano & Bover (1995) and Blundell & Bond (1998) may be well-suited for this case. However,a dynamic specification is not an improvement in the methodology, mainly because of the limits surrounding the GMM estimator; internal instruments, though attractive as a response to endogeneity, have serious limitations (Roodman & Floor, 2008). A large collection of instruments, even if individually valid, can be collectively invalid in finite samples because they over-fit endogenous variables. They also weaken the Hansen test of overidentifying restrictions, which is commonly relied upon to check instrument validity. Also Bun & Windmeijer (2010) highlight the weak instrument problem for the system GMM model and suggest the use of testing procedures that are robust to this issue. Thus, rather than relying on some specific procedure which is far from universally accepted, we choose to carry out our analysis by using more customary econometric tools. This choice might also have its counterpart whether the linear panel model is not the right one. A more extensive investigation is needed and we leave it for future research.

Empirical results

Table I provides estimates for alternative versions of the participation problem and reports the estimates for the linear probability model, probit and complementary

log log model respectively. As robustness check, we run the regressions including time dummies, alternative measures of distance and covariates related to the labor market scenario. The results apply to UN operations only for the reasons mentioned in the previous section.

Tables from II to IV provide the first-difference estimates and the within estimates for alternative versions of the troops contribution equation. In Table II we report the factors affecting the size of contribution in UN missions; in Table III we present a panel estimates of the drivers of non-UN troops contribution; and in Table IV the estimates of the NATO-led and EU missions alone.

Participation

Results in Table II confirm most part of the arguments presented in the theoretical framework. Hypothesis 1 on the interests linked with the possibility that a conflict may spill over into surrounding areas is confirmed. The "'same area"' dummy is strongly significant and positive, emphasizing that contributor geographic propinquity to the conflict region bolsters peacekeeping contribution to that region. The negative sign and significance of the distance between a donor country and a recipient region substantiate the finding. This is consistent with a recent study on peacekeeping financial burden sharing by Gaibulloev *et al.* (2009). Due to its time-invariant nature, these covariates are only used in the random effect probit and cloglog.

Hypothesis 2 expectations are also supported by empirical findings. The negative sign of the real GDP per capita and the tertiary enrollment ratio and the positive sign of the number in armed forces confirm the "mercenarization" hypothesis. It is consistent with the assumption that poorer countries are more likely to join a UN operation, as found also by Victor (2010) although the number in armed forces is not statistically significant. The tertiary enrollment ratio captures the sharp discrepancies in higher education opportunities between developed and developing nation; its negative sign and significance reinforces our hypothesis about the persistence of poorly-trained troops in the composition of peacekeeping missions. The number of operations with disproportionate West European and North American country participation has evidently shrunk in the period considered. The tolerance of casualties (Hypothesis 3) is not entirely supported. The coefficient of the number of deaths among peacekeepers and the real GDP per capita do not tell a consistent story. One is positive and statistically different from zero over different specifications, while the other is negative. Hypotheses 4 and 5 are validated. The proxies for the level of threat (conflict intensity) and humanitarian implications (number of displaced people) are both positive and significant, suggesting that the higher the security threat and the humanitarian implications that a conflict poses, the higher the probability of contributing to a UN operation is. In a study on outside unilateral interventions in internal conflicts, Regan (1998) also considers these two factors and finds two opposite effects. While humanitarian crises are associated with an increase in the probability of intervention, an increase

in the intensity of the conflict decreases the probability of intervention. Our study corroborates his fining that presence of a large population displacement or an imminent humanitarian crisis, the probability of participation increases. Therefore, the role of humanitarian issues and concerns about an impending humanitarian crisis seems quite established. However, we argue that when the conflict is of high intensity - and the associated threat is of high risk - it plays a similarly large and critical role in determining the decision to intervene.

Hypothesis 6 is also confirmed. We measure the sustainability of deployment by the number of missions supported at the same time. The positive sign of the coefficient and the negative sign of its square, both at the 0.01 level over alternative specifications, predict a negative effect whenever the number of concurrent commitments exceed a threshold, resulting in a an inversely U-shaped relationship. This is consistent with our theoretical expectations on the existence of a "troops constraint". Hypothesis 7 on the UNSC candidacy is only partially supported by the empirical findings. Although the signs are in the predicted direction, sitting temporarily in the UN Security Council is not statistically significant. The military expenditure as percentage of the GDP and the militarization rate are either insignificant or negative.

Troop contribution

Results for the troop contribution equation are in Tables II-IV. Hypothesis 1 on conflict spillover is not tested since the measures for the geographic proximity are time-invariant.

We start with Table II, where we have the results for UN operations, ranging from MINURCA in CAR to UNIFIL in Lebanon (see Appendix). The comparative advantage in manpower (Hypothesis 2) is, along with the international security threat, among the main drivers of peacekeeping contribution to UN operations. Both the signs and significance of the real GDP per capita and the number in armed forces are consistent with the theory. Poorer troop contributing countries, which send the lowest paid forces, are reimbursed more than their actual costs. The unemployment rate is always negative, as predicted by the theoretical arguments, although it is not significant in few specifications. The strategy for developing countries is to dispatch large contingents, since they are more labor intensive, as a consequence of the low relative value of labor. The tertiary enrollment ratio loses its statistical significance in the troop contribution problem over alternative model specifications and categories.

The tolerance of casualties (Hypothesis 3), when captured by the number of deaths among peacekeepers, has a positive and significant impact on the number of troops deployed and the participation effort in UN missions. The result is counterintuitive and runs counter our hypothesized relation. A level of threat (Hypothesis 4) is among the strongest determinants of countries contribution. The conflict intensity causes an increase in the size of contribution for both models (within and first difference) and for any operation category. The finding confirms the

previous results on the likelihood of intervention, thus supporting the theory that the global emergency that a conflict poses urge governments to intervene with a large deployment. This again contradicts Regan (1998) findings.

The number of displaced people shows no consistency, it is either negative or positive, depending on the methodology. The sustainability index - the number of multiple missions (Hypothesis 6) - is negative as expected in UN operations, although it misses the significance level. Hypothesis 7 on the level of ambition and standing in the international arena is not supported by our findings. Both the militarization rate and the military expenditure as percentage of the GDP are not significant. Contributor-specific benefits linked to his standing in the international community are not a factor for peacekeeping missions as theorized.

Table III presents the results for Non-UN operations. This heterogeneous category includes operations led by the NATO (e.g. KFOR, SFOR); the European Union (e.g. EUFOR in Congo, Chad and Bosnia); the African Union (e.g. AU forces in Sudan, Burundi and Somalia); the Economic Community of Central African States (e.g. CEEAC forces in CAR); the Commonwealth of Independent States (e.g. Georgia, Moldova); and *Ad-hoc* coalitions (e.g East Timor, Côte d'Ivoire). They corroborate most of our hypothesis.

Hypothesis 2 on the relative advantage in manpower is supported by our empirical findings. This mechanism is clear in the UN sample. In Non-UN and NATO/EU operations, the number in armed forces is insignificant while the GDP per capita is significant in only two specifications, as one would expect. This may be explained by the fact that developing countries readily contribute personnel to UN operations for the financial and training benefits that participation provides. This financial support is not provided in Non-UN missions. The tolerance of casualties appears to be a significant disincentive to dispatch troops in in non-UN missions, where our proxy (i.e. the number of deaths among peacekeepers) has the expected sign. When the real GDP per capita is used as a proxy, the coefficient is also negative and significant, emphasizing that wealthier states are less willing to dispatch a large number of national troops to multilateral peace operations. In non-UN missions, where combatants can inflict human losses, wealthier states are less willing to provide troops in the middle of fighting. This finding confirms that public support for military intervention is reputedly soft and short-lived and might disappear in presence of combat casualties (Mueller, 2002). While the level of threat is again positive and significant, as postulated by Hypothesis 4, the number of displaced people does not affect the number of national troops deployed in non-UN operations in the anticipated direction, thus suggesting that humanitarian crises hamper the size of contribution in ongoing non-UN peace operations. The number of concurrent operations is negative and significant as expected, therefore the participation in multiple missions is a significant obstacle to increasing peacekeeping forces and can easily hamper the willingness to increase the size of the commitment in additional operations. Finally , the level of standing and integration into global military system, when captured by the militarization rate, affects positively the size of donors' contribution.

The results for NATO and EU operations can be seen in Table IV. We present these two sets of operations together to offer an homogeneous group of countries, sharing many economic and geopolitical features. We are not able to further narrow down the set of countries (e.g. only AU or EU) due to an insufficient number of observations. The results present some relevant exceptions, in which the sign of the coefficient is not in the direction predicted by the theoretical arguments. The number of deaths among troops is positive, suggesting that Western countries are more prone to dispatch large contingents in operations presenting risks of casualties. The main driver of NATO and EU peacekeeping is the conflict intensity, while the number of concurrent operations hampers the size of their contributions. The most important insight in this Table is the negative sign of the real per capita GDP and the military expenditure as a share of the GDP. This suggest that when it comes to the size of the contribution, the relatively less developed economies, or those facing a military downsizing - notably Eastern European Countries - contribute more to EU and NATO missions. This may support Bobrow & Boyer (1997) view about the increasing surge in participation by countries previously in the Warsaw Pact, which are now active contributors to peacekeeping. The new post-Cold War security environment, the prospect of collective defence and the integration into NATO has certainly made this growing participation possible.

Conclusions

This paper attempts to address the possible motivations that interact to produce peacekeepings contribution by a diverse pool of participants. Most scholarly studies of peacekeeping have focused on the UN, ignoring other types of peacekeeping missions, such as missions by regional inter-governmental organizations (e.g. AU, EU) and peacekeeping missions by states or *ad-hoc* groups of states. Our comprehensive empirical study suggests that at the state level the tolerance of casualties, the number of multiple missions and the comparative advantage in manpower play a role. Overall, countries with a comparative advantage in manpower - the UN "mercenaries" - appear to commit more fully to these operations. Indeed, Western governments have to fill the gap between what the international system is willing to pay for peacekeeping troops (as reflected by the UN reimbursement for example) and the amount they actually pay volunteer troops. The results of non-UN missions show that states abstain from engaging in operations with a high level of casualties among peacekeepers. Our results strongly indicate that the number of concurrent operations is another significant obstacle to increasing peacekeeping participations. But a country's contributions to peacekeeping operations are also explained by its relative wealth, in contrast with Lebovic (2004) findings (even when novel measures are used, such as the enrollment rate). Our study lends evidence to support the insight of Victor (2010) that the size of a state's military predicts the contribution to peacekeeping only when UN operations are investigated. Contributions to Non-UN missions and NATO-EU operations are mainly

affected by conflict characteristics.

At the international system level, the security threat that a conflict poses, the proximity to the conflict area and the number of displaced people influence the likelihood and size of intervention. Although the role of the geographic proximity seems to be very established in the literature, there are some exceptions which find no significance (e.g. Lebovic, 2004). We show that the distance does matter in decisions about when and how to respond to civil conflicts. Our empirical evidence also shows that the level of threat triggers country's participation and contribution to peacekeeping. A similar attempt to control for the level of conflict is by Regan (1998), who suggests a counter-intuitive negative relation. We find that the most robust explanations of when states choose to intervene are the proximity to the conflict and the level of threat. When a conflict is regarded as a threat to global and regional stability, security concerns will trigger nation-specific responses. Finally, the number of displaced people is is shown to increase the likelihood but not the size of participation. The media coverage of social dislocations might be an important factor affecting the likelihood of contribution in UN operations.

Generally, our findings provide further evidence of the centrality of country-specific benefits in explaining the participation to peacekeeping (Khanna*et al.*, 1999). However, we show that contributor specific benefits play the same role in UN and non-UN peacekeeping missions, in contrast with previous empirical studies on the financial burden (e.g. Gaibulloev *et al.*, 2009). Moreover, some factors affecting whether a country participates in an operation might not be those affecting how participants allocate to those operations. Along with the explosive growth in the demand for troops, there is an impressive rise in the numbers and quality of troops required to fulfill new tasks. While the economic crisis is leading to s cutbacks in peacekeeping expenditure, a new level of engagement is deemed necessary to improve the effectiveness of peace missions. Our work offers some valuable insights into the complex dynamics of peacekeeping operations. Understanding why and where countries strategically decide to intervene is central to evaluating the impact of operations and to promoting successful conflict outcomes.

Notes

[1]This supply-demand distinction is important, since every economic transaction has two sides. For instance, Gaibulloev *et al.* (2009) refer to what we would call the supply of peacekeeping, payments for UN and non-UN peacekeeping missions, as the demand for peacekeeping (i.e. how much the contributing governments pay for a particular service they demand, peacekeeping); we refer to this as the supply of peacekeeping. Indeed, from the perspective of the countries in conflict we think that the supply of peacekeeping terminology is more appropriate

[2]See the UN Department of Peacekeeping Operations, http://www.un.org/en/peacekeeping/

[3] Take for example ECOMOG troops in Liberia. They were heavily involved in looting, arms trading and contraband. Senior officers supplied factions with weapons in return for looted goods (Meredith, 2006).

[4] SIPRI provides budget costs for UN multilateral peace operations. They refer to core operational costs, which include the cost of deploying personnel and direct non-field support

costs. The cost is shared by all UN member states through a specially designed scale of assessed contributions, which takes no account of their participation in the operations.

[5]c.g. www.un.org/en/peacekeeping/

[6]European forces under NATO and Asian forces under UN command operate across the world. EU deployments, for example, are mixed. We have two distant areas of operation: EU missions in Africa (such as Artemis in Congo or EUROFOR in Chad/CAR) and EU mission in the Balkans (Macedonia and Bosnia-Herzegovina) East African troops operate in West African operations, and vice versa. *Ad-hoc* coalitions are often made up by former colonial powers (e.g. France in Cote d'Ivoire).

[7]The conflict intensity measures the perceived global level of threat rather than the risk of casualties. To reinforce this assumption, we calculated the correlation between conflict intensity and deaths per year among peacekeepers. The Spearman's rank correlation coefficients are the following: UN missions ρ = -0.04; Non-UN missions ρ = 0.24; NATO + EU missions ρ = 0.13.

[8]More arguments against the misuse of a censored regression are developed in chapter 3 of Angrist & Pischke (2009).

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Table I: Linear probability model, random effect probit and complementary log log for partecipation probability, UN missions

	Linear probability model			RE probit†			RE clogog†		
	I	II	III	IV	V	VI	VII	VIII	IX
Deaths per year	0.0002***	0.0000	0.0001	0.0023**	0.0017	0.0045	0.0025*	0.0001	0.0039
	(0.0001)	(0.0001)	(0.0001)	(0.0012)	(0.0040)	(0.0046)	(0.0014)	(0.0045)	(0.0052)
Conflict intensity	0.0295***	0.0326***	0.0463***	0.5613***	0.1781	0.1566	0.5993***	0.2197	0.1719
	(0.0060)	(0.0083)	(0.0106)	(0.0687)	(0.1518)	(0.2041)	(0.0844)	(0.1902)	(0.2535)
Displaced people/1x10^6	0.0479***	0.0579***	0.0599***	0.6218***	0.9306***	0.7184**	0.7460***	1.2508***	1.0238***
	(0.0175)	(0.0220)	(0.0227)	(0.1234)	(0.2577)	(0.3043)	(0.1468)	(0.3148)	(0.3746)
No of concurrent PKOs	0.0766***	0.0717***	0.0728***	1.1401***	1.3453***	1.7247***	1.4142***	1.5973***	1.7455***
	(0.0103)	(0.0142)	(0.0146)	(0.0930)	(0.2289)	(0.2550)	(0.1212)	(0.2855)	(0.3137)
No of concurrent PKOs^2	-0.0053***	-0.0052**	-0.0043**	-0.0953***	-0.1335***	-0.1861***	-0.1243***	-0.1621***	-0.1901***
	(0.0016)	(0.0021)	(0.0021)	(0.0163)	(0.0420)	(0.0480)	(0.0199)	(0.0497)	(0.0548)
Real per capita GDP/1000	-0.0012	-0.0048*	-0.0033	-0.0227**	-0.1328***	-0.0692*	-0.0279**	-0.1507***	-0.0938*
	(0.0020)	(0.0027)	(0.0030)	(0.0102)	(0.0245)	(0.0387)	(0.0136)	(0.0301)	(0.0488)
Military Expenditure/GDP	-0.0038	-0.0053	-0.0052	-0.1065	-0.2881***	-0.3661***	-0.1367*	-0.3592***	-0.4157***
	(0.0087)	(0.0139)	(0.0140)	(0.0650)	(0.0994)	(0.1049)	(0.0732)	(0.1350)	(0.1417)
No in armed forces/1000	-0.0022	-0.0129	0.0029	-0.2394	-0.1067	0.1197	-0.2537	-0.1121	0.0935
	(0.0192)	(0.0154)	(0.0153)	(0.3687)	(0.7432)	(0.8012)	(0.4452)	(0.9508)	(0.9852)
UNSC candidate	0.0020	0.0118	0.0136	0.0337	0.4006	0.6133	0.1349	0.4962	0.6856
	(0.0119)	(0.0155)	(0.0152)	(0.1958)	(0.3588)	(0.3871)	(0.2286)	(0.4225)	(0.4458)
Militarization rate		0.4039	-0.3822		-61.7106*	-80.5580**		-66.7038*	-76.9078*
		(1.0213)	(1.0311)		(33.2707)	(36.0528)		(39.2427)	(42.2952)
Unemployment rate		0.0023	0.0029		0.0566	-0.0327		0.0453	-0.0366
		(0.0025)	(0.0029)		(0.0591)	(0.0689)		(0.0689)	(0.0810)
Tertiary enrollment ratio		0.0005	0.0015		-0.0645***	-0.0677**		-0.0854***	-0.0820**
		(0.0013)	(0.0015)		(0.0241)	(0.0275)		(0.0305)	(0.0347)
Same area				2.7707***			3.2098***		
				(0.4535)			(0.5270)		
log of distance					-1.0565	-0.9977***		-1.1964*	-1.2101
					(0.6633)	(0.3787)		(0.6822)	(0.8099)
constant	0.0078	0.0122	-0.0899	-11.7703***	-4.8392	-8.5709***	-14.3365***	-5.9443	-6.7458
	(0.0360)	(0.0902)	(0.0990)	(0.8230)	(5.3666)	(3.1498)	(1.2638)	(5.5323)	(6.7693)
$\ln \sigma_\alpha^2$				3.0649***	3.3504***	4.3133***	3.4175***	3.6750***	3.7482***
				(0.1117)	(0.1835)	(0.1172)	(0.1331)	(0.1661)	(0.1803)
Time dummies	no	no	yes	no	no	yes	no	no	yes
N	9683	4763	4763	9683	2829	2829	9683	2829	2829
log-likelihood				-1720.0292	-523.3203	-519.1602	-1743.1262	-525.6578	-516.9730

Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

† Correlation between ε_i and the observed characteristics is allowed by assuming a relationship of the form: $\varepsilon_i = \overline{x}a + \alpha_i$,where $\alpha_i \sim iidN(0, \sigma_\alpha^2)$.

Table II: Panel estimation of troops contribution, UN missions

	Within			First difference		
	I	II	III	IV	V	VI
Deaths per year	0.0044***	0.0041**	0.0036*	0.0040***	0.0035**	0.0044**
	(0.0014)	(0.0018)	(0.0018)	(0.0015)	(0.0017)	(0.0018)
Conflict intensity	0.2037***	0.1298	0.1824*	0.0717	0.1439**	0.1722*
	(0.0704)	(0.0861)	(0.1074)	(0.0454)	(0.0687)	(0.0877)
Displaced people/1x10^6	-0.4427***	-0.2445*	-0.2093	0.1303*	0.1564	0.2287*
	(0.1565)	(0.1432)	(0.1430)	(0.0782)	(0.1226)	(0.1330)
No of concurrent PKOs	-0.0353	0.0435	0.0693	-0.0405	0.0571	0.0547
	(0.0481)	(0.0688)	(0.0678)	(0.0332)	(0.0460)	(0.0515)
Real per capita GDP/1000	-0.0341**	-0.0412**	-0.0609**	-0.0285**	-0.0493**	-0.0673**
	(0.0172)	(0.0187)	(0.0272)	(0.0131)	(0.0233)	(0.0308)
Military Expenditure/GDP	-0.0056	0.0522	0.0401	0.0216	-0.0018	-0.0112
	(0.0414)	(0.0439)	(0.0476)	(0.0228)	(0.0171)	(0.0213)
No in armed forces/1000	0.5314*	0.4610	0.4963	0.0781	0.1894	0.1610
	(0.2872)	(0.3450)	(0.3385)	(0.0878)	(0.1643)	(0.1769)
UNSC candidate	0.0689	0.1832	0.1414	-0.0863	0.0560	0.0755
	(0.1619)	(0.1873)	(0.1858)	(0.0845)	(0.1295)	(0.1282)
Militarization rate		-8.2260	-10.9477		-14.5829	-15.1403
		(17.9308)	(17.9369)		(14.9749)	(15.7409)
Unemployment rate		-0.0287	0.0167		-0.0158	0.0182
		(0.0342)	(0.0411)		(0.0313)	(0.0345)
Tertiary enrollment ratio		0.0209	0.0145		0.0059	-0.0051
		(0.0169)	(0.0194)		(0.0171)	(0.0197)
Time dummies	no	no	yes	no	no	yes
N	1748	823	823	1338	569	569

Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table III: Panel estimation of troop contribution, Non-UN missions

	Within			First difference		
	I	II	III	IV	V	VI
Deaths per year	-0.0003	-0.0002	-0.0003	-0.0003**	-0.0002**	0.0000
	(0.0002)	(0.0002)	(0.0002)	(0.0001)	(0.0001)	(0.0001)
Conflict intensity	0.5878***	0.5833***	0.6559***	0.2894***	0.3341***	0.2924***
	(0.0996)	(0.0969)	(0.1043)	(0.0681)	(0.0894)	(0.0922)
Displaced people/1x10^6	-0.7529***	-0.8933***	-0.9818***	-0.3940***	-0.5051***	-0.5869***
	(0.1645)	(0.2094)	(0.2134)	(0.1246)	(0.1677)	(0.1739)
No of concurrent PKOs	-0.0844***	-0.0865***	-0.0048	-0.0051	0.0109	-0.0053
	(0.0270)	(0.0310)	(0.0413)	(0.0234)	(0.0262)	(0.0306)
Real per capita GDP/1000	-0.0084	-0.0118	-0.0067	-0.0098**	-0.0257**	-0.0110
	(0.0051)	(0.0072)	(0.0103)	(0.0041)	(0.0103)	(0.0122)
Military Expenditure/GDP	-0.0182	0.0265	0.0327	0.0196	0.0385	0.0386
	(0.0555)	(0.0532)	(0.0554)	(0.0518)	(0.0499)	(0.0490)
No in armed forces/1000	0.2682	-1.0904	-0.9025	0.0349	0.3709	0.2498
	(0.2496)	(1.6988)	(1.5884)	(0.0947)	(0.8973)	(0.8407)
Militarization rate		23.7280*	14.0230		-4.0191	-10.0838
		(13.6763)	(12.8195)		(10.6911)	(11.0416)
Unemployment rate		-0.0596**	-0.0362		-0.0484**	-0.0309
		(0.0286)	(0.0296)		(0.0239)	(0.0246)
Tertiary enrollment ratio		0.0004	0.0075		0.0052	0.0057
		(0.0067)	(0.0082)		(0.0059)	(0.0070)
Time dummies	no	no	yes	no	no	yes
N	1521	1138	1138	1147	811	811

Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table IV: Panel estimation of troop contribution, NATO and EU missions

	Within			First difference		
	I	II	III	IV	V	VI
Deaths per year	0.0020**	0.0059***	0.0065***	-0.0004	0.0040***	0.0059***
	(0.0009)	(0.0009)	(0.0010)	(0.0010)	(0.0009)	(0.0011)
Conflict intensity	0.8023***	0.7644***	1.0769***	0.4873***	0.4848***	0.6539***
	(0.1303)	(0.1163)	(0.1425)	(0.1068)	(0.1082)	(0.1371)
Displaced people/1x10^6	-1.3798***	-1.2214***	-1.1551***	-0.1178	-0.9680***	-0.8848***
	(0.3373)	(0.3911)	(0.4061)	(0.2263)	(0.2426)	(0.2350)
No of concurrent PKOs	-0.0408	-0.0700**	0.0037	0.0497**	0.0683***	0.0017
	(0.0406)	(0.0348)	(0.0478)	(0.0236)	(0.0255)	(0.0317)
Real per capita GDP/1000	-0.0343***	-0.0348***	-0.0032	-0.0122	-0.0436***	-0.0080
	(0.0094)	(0.0104)	(0.0101)	(0.0082)	(0.0125)	(0.0120)
Military Expenditure/GDP	-0.1129*	-0.0894**	-0.0441	-0.0789*	-0.0483	-0.0534
	(0.0578)	(0.0435)	(0.0464)	(0.0439)	(0.0373)	(0.0367)
No in armed forces/1000	0.0621	-1.1844	-0.7893	0.2017	0.5590	0.8356
	(0.5922)	(2.5072)	(1.9734)	(0.2349)	(1.2893)	(1.1794)
Militarization rate		26.4200	9.3039		-2.5964	-10.8302
		(17.0760)	(14.6937)		(12.7216)	(13.8454)
Unemployment rate		-0.0321	-0.0426*		-0.0333	-0.0263
		(0.0249)	(0.0249)		(0.0244)	(0.0245)
Tertiary enrollment ratio		-0.0110	0.0072		-0.0015	0.0001
		(0.0067)	(0.0075)		(0.0071)	(0.0084)
Time dummies	no	no	yes	no	no	yes
N	1098	856	856	817	595	595

Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table V: Empirical evidence and expected results

Variable	UN	non-UN	NATO-EU
Likelihood			
Operation and conflict characteristics			
Number of deaths per year	positive	"	"
Conflict intensity	positive †	"	"
Displaced people	positive †	"	"
Same geographical area	positive †	"	"
Distance	negative †	"	"
Donor Characteristics			
No of concurrent PKOs	inversely U-shaped †	"	"
Real per capita GDP	negative †	"	"
Military Expenditure/GDP (%)	negative	"	"
No in armed forces	insignificant	"	"
Militarization rate (%)	negative	"	"
Unemployment rate (%)	insignificant	"	"
Tertiary enrollment ratio (%)	negative †	"	"
UNSC candidate	insignificant	"	"
Size			
Operation and conflict characteristics			
Number of deaths per year	positive	negative †	positive
Conflict intensity	positive †	positive †	positive †
Displaced people	no consistency	negative	negative
Donor Characteristics			
No of concurrent PKOs	insignificant	negative †	negative †
Real per capita GDP	negative †	negative †	negative †
Military Expenditure/GDP (%)	insignificant	insignificant	negative
No in armed forces	positive †	insignificant	insignificant
Militarization rate (%)	insignificant	positive †	insignificant
Unemployment rate (%)	insignificant	negative	insignificant
Tertiary enrollment ratio (%)	insignificant	insignificant	insignificant

† Results are those expected